

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A positioning apparatus for positioning a test head for testing electronic components, said positioning apparatus comprising:

a first ~~cylindrical~~ member;

a support coupled to said first ~~cylindrical~~ member for supporting the test head;

a second ~~cylindrical~~ member arranged relative to said first ~~cylindrical~~ member so that said first ~~cylindrical~~ member is at least partially above and moves relative to said second ~~cylindrical~~ member, an interior of said first cylindrical member and a top of said second cylindrical member defining a variable size fluid compartment with within said first cylindrical member;

a pressure regulator for maintaining a pressure within said fluid compartment by allowing feeding or allowing removal of fluid from said fluid compartment responsive to a change of said pressure in order to increase or decrease size of said fluid compartment, respectively;

a lifting device for raising and lowering said second member in order to raise and lower said first cylindrical member;

said first member also movable independently of said lifting device.

2. (Original) The positioning apparatus of claim 1 wherein said drive mechanism is a threaded drive mechanism.

3. (Original) The positioning apparatus of claim 2 wherein said drive mechanism is a lead screw mechanism.

4. (Original) The positioning apparatus of claim 1 wherein said fluid compartment is positioned above said drive mechanism such that when said drive mechanism drives said fluid compartment in a vertical direction, the test head is also driven in the vertical direction.

5. (Original) The positioning apparatus of claim 1 additionally comprising:

a position sensor for detecting a vertical position of the test head.

6. (Currently Amended) A positioning apparatus for positioning a test head for testing electronic components, said positioning apparatus comprising:

a drive mechanism for moving the test head in a vertical direction; and

a pneumatic compliant coupling mechanism including a first ~~cylindrical member~~ and a second member, an interior of said first member and a top of said second member defining a fluid compartment ~~therein~~, said pneumatic compliant coupling mechanism causing said compartment to change volume to provide a range of motion to the test head in the vertical direction, said ~~pneumatic compliant coupling mechanism~~ second member being positioned above and secured to said drive mechanism such that said drive mechanism moves said ~~pneumatic compliant coupling mechanism~~ second member in order to move the test head in the vertical ~~direction~~ direction;

said first member also movable independently of said drive mechanism.

7. (Original) The positioning apparatus of claim 6 wherein said drive mechanism is threaded.

8. (Currently Amended) The positioning apparatus of claim 6 wherein said pneumatic compliant coupling mechanism ~~includes a fluid compartment and a pressure regulator~~ is for maintaining a pressure within said fluid compartment such that the test head may be suspended in the substantially weightless condition.

9. (Currently Amended) A method of positioning a test head for testing electronic components, said method comprising the steps of:

(a) providing flow of a fluid into and out of a variable size fluid compartment coupled to the test head in order to increase or decrease size of the fluid compartment, respectively, in order to increase height and decrease height of said fluid compartment, respectively;

(b) mechanically moving the test head to a desired position in a vertical direction using a drive mechanism ~~below which moves a member which forms a bottom of~~ the fluid compartment after step (a); and

(c) fluidly suspending the test head in a substantially weightless condition by maintaining a fluid pressure in the fluid compartment positioned between the test head and the drive mechanism;

(d) raising and lowering said member in order to raise and lower said fluid compartment wherein height of said fluid compartment is movable independently of said member.

10. (Original) The method of claim 9 further comprising a step of:

expanding and contracting the fluid compartment using a piston secured to the drive mechanism.

11. (Original) The method of claim 9 further comprising a step of:

applying an external force to adjust the desired position of the test head.

12. (Original) The method of claim 9 further comprising a step of:

providing air flow into the fluid compartment such that the substantially weightless condition of the test head is maintained.

13. (Original) The method of claim 9 further comprising a step of:

providing air flow out of the fluid compartment such that the substantially weightless condition of the test head is maintained.

14. (Currently Amended) A positioning apparatus for a test head of an electronic testing system for testing electronic components, said positioning apparatus comprising:

a first ~~cylindrical~~ member;

a second ~~cylindrical~~ member which is coupled to the first ~~cylindrical~~ member such that the first ~~cylindrical~~ member can slide in a longitudinal direction;

a carrier-arm device that carries the test head and is attached to the first ~~cylindrical~~ member;

a lifting device for raising and lowering the first ~~cylindrical~~ member;

an interior of said first member and a top of said second member forming a variable size fluid-holding compartment that is provided inside the first ~~cylindrical~~ member; and

a pressure generation device that is connected via a fluid line to the fluid-holding compartment and is designed to generate a fluid pressure force directed counter to the weight of the test head and the support arm device, wherein

the first ~~cylindrical~~ member slides in relation to the second ~~cylindrical~~ member to vary size of the fluid-holding compartment and the pressure in the fluid-holding compartment is regulated via a pressure regulation device in such a manner that the first cylindrical member, together with the support arm device and the test head, is brought into a suspended position that is height-adjustable in relation to the second cylindrical member, said first member movable independently of said lifting device.

15. (Currently Amended) The positioning apparatus as recited in claim 14, wherein the second ~~cylindrical~~ member includes a lifting rod that is adjustable in height by means of a threaded drive mechanism.

16. (Currently Amended) The positioning apparatus as recited in claim 14, wherein the second ~~cylindrical~~ member includes a hollow lifting rod that can be adjusted in height via a threaded drive mechanism, the threaded drive mechanism having a threaded drive centrally arranged inside the second ~~cylindrical~~ member that is introduced into the hollow lifting rod.

17. (Currently Amended) The positioning apparatus as recited in claim 14, wherein the fluid-holding compartment is bounded at the top by a top end face of the first ~~cylindrical~~ member and at the bottom by the second ~~cylindrical~~ member.

18. (Previously Presented) The positioning apparatus as recited in claim 14, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.

19. (Currently Amended) The positioning apparatus as recited in claim 15, wherein the second ~~cylindrical~~ member includes a hollow lifting rod that can be adjusted in height via a threaded drive mechanism, the threaded drive mechanism having a threaded drive centrally arranged inside the second ~~cylindrical~~ member that is introduced into the hollow lifting rod.

20. (Currently Amended) The positioning apparatus as recited in claim 15, wherein the fluid-holding compartment is bounded at the top by a top end face of the first ~~cylindrical~~ member and at the bottom by the second ~~cylindrical~~ member.

21. (Currently Amended) The positioning apparatus as recited in claim 16, wherein the fluid-holding compartment is bounded at the top by a top end face of the first ~~cylindrical~~ member and at the bottom by the second ~~cylindrical~~ member.

22. (Previously Presented) The positioning apparatus as recited in claim 15, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.

23. (Previously Presented) The positioning apparatus as recited in claim 16, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.

24. (Previously Presented) The positioning apparatus as recited in claim 17, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.